Original Research Article

Clinico-Demographic Profile of patients with Ocular Surface Squamous Neoplasia in tertiary care Hospital of North India

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Abstract

Background: Ocular surface squamous neoplasia (OSSN) is a term used to describe neoplastic epithelial abnormalities of conjunctiva and cornea, ranging from Squamous Dysplasia to Invasive Squamous Cell Carcinoma. In current times, the incidence of OSSN seems to be on the rise, particularly in developing countries like India. **Aim:** To study demographic characteristics and compare the clinical presentation and histopathology features of Ocular Surface Squamous Neoplasia (OSSN) in a tertiary eye care hospital. Design: Retrospective cross-sectional study. **Methods:** We study 47 cases of OSSN who presented to the out-patient department of Ophthalmology over a period of 18 months were retrospectively studied for clinical, demographic profiles and histopathological features. **Results:** A total of 47 patients were incorporated in this study. The average age of patients was 44.56 years (range- 15 years to 84 years) consisting of 23(57.5%) male and 17 (42.5%) female. The ratio of participating male and female patients (M:F) was 1.35:1. Nasal bulbar conjunctiva in (72.5%) was the most frequently involved. A nodule at the limbus is the commonest presentation. Nodular type of lesions seen in 24 patients (60%) followed by leukoplakic seen in 22.5% patients . Diffuse type seen in 17.5% patients. Total 22.5 % of patients having OSSN were found to be HIV positive. Histologically**,** invasive lesions seen in 14 patients (35%), Carcinoma in-situ in 15 (37.5%) and Mild to severe dysplasia in 11(27.5%) **Conclusion:** Increased incidence of OSSN was seen in males and people with outdoor occupations. Nodular type of lesion is the commonest variety. HIV positive individuals have an increased incidence of OSSN with invasive characteristics. Hence, ophthalmologists need to be alert of this association and a meticulous workup is warranted for all patients presenting with OSSN, particularly in younger age group. Our study also suggests that OSSN may be one of the manifestation of underlying HIV infection.

Keywords: OSSN, dysplasia, HIV, squamous cell carcinoma.

Introduction

The term ocular surface squamous neoplasia (OSSN) refers to a spectrum of epithelial squamous malignancies, ranging from dysplasia to invasive squamous cell carcinoma1 Reported worldwide incidence of OSSN ranges between 0.02–3.5 cases per 100,000 people. OSSN is mostly unilateral and the incidence is strongly connected with exposure to ultraviolet radiation, human immunodeficiency virus (HIV) infection, human papillomavirus infection[1-6], heavy cigarette smoking,[7,8] male gender and age. The average age of presentation is usually the sixth and seventh decades of life. However, in immunocompromised individuals,OSSN may occur at a younger age[3,9]. Several cases of OSSN have been reported after chronic inammatory diseases, such as benign mucous membrane pemphigoid[10], chronic blepharoconjunctivitis[11], leukemia[12] and lymphoma[13] , and in a patient following liver transplantation[14]. Other etiologic factors associated to OSSN include ocular surface injury[15,16] , vitamin A deciency[16] , and exposure to chemicals and drugs such as triuridine[17]. Xeroderma pigmentosum is another rare systemic condition which leads to OSSN in younger age group Though a rare condition, the incidence of OSSN has been increasing in the developing countries in recent years. Our institute is also observing an increase in number of OSSN cases as all the suspected cases have proven with hisptopathological examination with each passing year. Thus, this study is our effort to find out the detailed clinic - demographic profile and management outcome of OSSN presenting at tertiary eye care center of Ophthalmology.

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Study design

A retrospective cross-sectional study was conducted on patients presenting to the out-patient department of Ophthalmology at tertiary care hospital Jammu (j and k) over a period of 18 months from February 2017 to august 2018 after taking permission from Institutional Ethics Committee.

Material and methods

We analysed 47 subjects who were suspected clinically to have OSSN and included them in the study. A detailed history including demographic data of Age, Sex, Occupation, HIV status of all the patients was obtained. Written informed consent were taken from all the patients enrolled after explaining the purpose of the study. Clinical features regarding the type of lesion, location, involvement of cornea were evaluated. Routine investigations like Hb %, CT, BT and HIV test were done after obtaining informed consent of the subjects. The lesion was excised with a 4mm margin clearance. The excised specimen was sent for histopathology examination. We have excluded 7 cases from further analysis in which histopathology had revealed a normal epithelium. The rest 40 histopathologically proven cases of OSSN were analysed further.

Statistical analysis

Data was entered into an Excel sheet and analysis was done. Appropriate statistical tools were employed for test of significance. Analysis was performed following compilation of data using SPSS. Descriptive statistics were used for demographic characteristics and the data being presented as percentages and mean.

Results and Observations

A total of 40 patients were included in this study. 23(57.5%) were male and 17 (42.5%) were female (table 1). The ratio of participating male and female patients (M:F) was 1.35:1. 32.5% of patients were less than 40 years of age and 60% of patients were greater than 40 yrs of age (table 1). Total 22.5 % of patients having OSSN were HIV positive and 77.5 % are HIV negative (table 2). A nodule at the limbus is the commonest presentation. Nodular type of lesions seen in 24 patients (60%) followed by leukoplakic seen in 22.5% patients. Diffuse type seen in 17.5% patients (table 3). Nasal bulbar conjunctival involvement seen in 29 cases (72.5%) was most common(table 4). In our study, Histopathological examination showed invasive lesions in 14 patients (35%), Carcinoma in-situ in 15 (37.5%) and Mild to severe dysplasia in 11(27.5%) depicted in table 5,fig. 1.

Table 1: Gender Distribution

Gender	<40 yrs	>40 yrs
Male	9	14
Female	5	12

Male preponderance more as compared to female in this study . 32.5% of patients were less than 40 years of age and 60% of patients were greater than 40 yrs of age.

Table 2: HIV status

HIV Status	Number of patients	Percentage
HIV positive	9	22.5
HIV negative	31	77.5

Total 22.5 % of patients having OSSN were HIV positive and 77.5 % are HIV negative

Table 3: Distribution of clinical types

Clinical type	Number of patients	Percentage
Nodular	24	60
Leukoplakic	9	22.5
Diffuse	7	17.5

Nodular type of lesions seen in 24 patients (60%) followed by leukoplakic seen in 22.5% patients . Diffuse type seen in 17.5% patients

Table 4: localization of lesion

Localization	Number of patients	Percentage
Nasal	29	72.5
Temporal	11	27.5

Nasal lesion seen in 72.5% and temporal lesions seen in 27.5% of cases.

Table 5: Histopathological types

Histopathological grade	Number of patients	Percentage
Mild Dysplasia (CIN 1)	4	10
Moderate Dysplasia (CIN 11)	5	12.5
Severe Dysplasia (CIN 111)	2	5
Carcinoma in situ (CIS)	15	37.5
Invasive form (SCC)	14	35

Invasive lesions seen in 14 patients (35%), Carcinoma in-situ in 15 (37.5%) and Mild to severe dysplasia in 11 patients (27.5%)

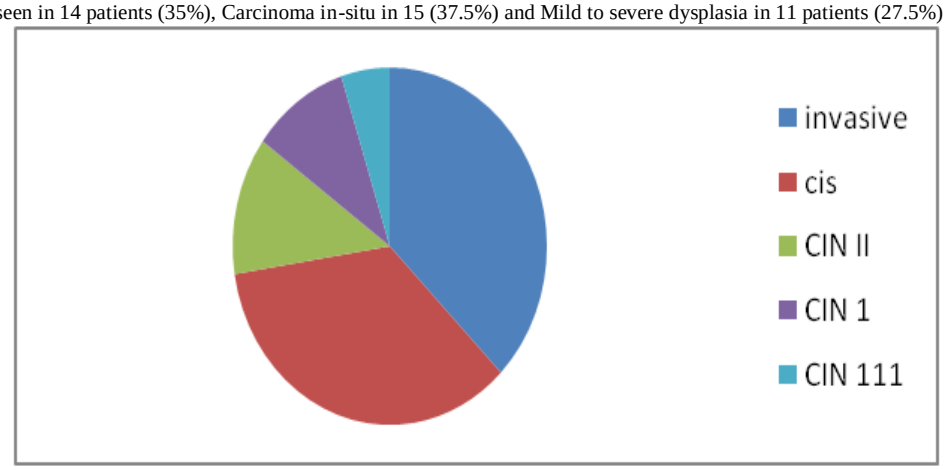

Fig. 1: Bar presentation showing histopathogical grading

Discussion

In our study, 57.5% of those involved patients were Males. Similar observation is seen in other studies where males outnumbered females. Male gender may be a risk factor for higher preponderance as they are more commonly engaged in professions involving outdoor work thereby leading to increased exposure to UV-B rays which is a known risk factor for development of OSSN. In a similar study done by Rohit Bang et al.,, the nodular variant was reported to be as high as 48%[13]. In this study 72.5% of the lesions are on the nasal side. According to a study done at Bascom Palmer Eye Institute 54% presented with nasal lesions[18].

In our study, 22.5% of the patients found to be positive for HIV and 77.5% tested negative. Mean age among HIV positive individuals was 34 years. HIV patients have more aggressive form of OSSN compared to HIV negative patients[19,20]. In a study done by Tanuja G et al., the mean age in HIV positive OSSN patients was 36 years and 29% of the patients with OSSN were HIV positive and OSSN was the only measurable manifestation of

underlying HIV infection[21]. In another study conducted in Malawi by Spitzer MS et al., which looked at the prevalence of HIV in patients with OSSN, found invasive disease In HIV positive cases Though our data on recurrence is low, we observed recurrent cases had histological grading CIN III to SCC[22].

Conclusion

Increased incidence of OSSN was observed in males and people with outdoor occupations. Nodular type of lesion is the commonest variety. HIV positive individuals have an increased incidence of OSSN with invasive characteristics. Hence, ophthalmologists need to be aware of this association and a detailed workup is necessary for all patients presenting with OSSN, particularly in the younger age group. Our study also suggests that OSSN may be one of the manifestation of underlying HIV infection.

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